



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,438	01/31/2001	Dennis L. Salbilla	P02104US0/10100157	3287
26271	7590	06/04/2004	EXAMINER	
FULBRIGHT & JAWORSKI, LLP 1301 MCKINNEY SUITE 5100 HOUSTON, TX 77010-3095			CHORBAJI, MONZER R	
			ART UNIT	PAPER NUMBER
			1744	

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/773,438

Applicant(s)

SALBILLA, DENNIS L.

Examiner

MONZER R CHORBAJI

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,6,12,14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,6,12,14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1744

1. This final office action is in response to the amendment received on 02/16/2004

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1, 5, 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaHaye et al. (U.S. Pat. 4,892,139) in view of Harms (U.S. Pat. 3,933,606).

LaHaye et al. disclose a means and method for preventing unwanted accumulation in heat exchangers. The method comprises applying and maintaining an electric charge on an object within the flow path of a fluid stream, wherein the fluid stream contains contaminants. More specifically, the step of applying an electric charge to an object comprises applying an electric charge to the body of a heat exchanger. The electric charge is applied and maintained on the heat exchanger in order to impart an electrical charge on the heat exchanger having the same polarity as the charge of the particles in the gas stream. Since the charges have the same polarity, the heat

exchanger repels the particles in the gas stream with sufficient force to overcome the inertia imparted to the particles by the gas stream flowing through the heat exchanger. Thus the particles of dust, ash or other particulate matter in the gas stream are deflected away from the heat exchanger surfaces. This prevents build up and accumulation of particles that could restrict or clog the gas flow and/or prevent efficient heat transfer to the surface elements (see column 1, line 60 to column 2, line 25). It is further disclosed that the voltage of the electrical charge being applied to the object can vary in the range of 100 to 6000 volts (see column 5, lines 40-44).

As shown in figures 1 and 2, a heat exchanger system (10) comprises a combustion nozzle arrangement (11), a combustion chamber (12), electrostatic negative ionization wall (13) and a heat exchanger section (14) through which a gas flow (15) of particulate laden gas flows from the combustion chambers (12) generated by the combustion fuel.

However, LaHaye et al. do not specifically recite the step of adjusting the magnitude of the electric charge.

Harms discloses a water treatment apparatus and process for electrolytically removing suspended and dissolved impurities from contaminated water. The process comprises feeding contaminated water to a column where it is exposed to an electrical field created between a plurality of oppositely charged perforate plates by a pulsating electrical signal (see columns 2-4). More specifically, Harms teaches that it is known to vary the magnitude of the electrical charge applied to the fluid in order to affect a desired

degree of contaminant removal depending upon the composition of the water being treated (see column 5, lines 57-61).

Therefore, since LaHaye et al. teach a large voltage range that is used to impart an electrical charge on the fluid, it would have been obvious to one of ordinary level of skill in the art at the time the invention was made to further modify the method of LaHaye et al. and adjust the magnitude of the electrical charge as taught by Harms in order to affect a desired degree of contaminant removal in the fluid being treated.

10. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaHaye et al. as applied to claim 1 above, and further in view of Sivavec et al. (U.S. pat. 6,451,210 B1)

LaHaye et al. do not teach or suggest the step of determining the level of contaminants in the fluid stream.

Sivavec et al. teach a method and system for treating a contaminated fluid stream. The term "fluid stream" includes water environments as well as environments in any of a gas, vapor or liquid state. Specific elements of the system include a sensing module to detect contaminants in a vapor or aqueous stream. The sensing module can be a flow-through cell that holds a sensor and that exposes the sensor to a contaminant in the fluid stream. Monitoring of contaminant concentration and other parameters in the influent stream to a carbon bed can be used to determine a correct sequence of treatment. Once the concentration has been determined the fluid is passed to an adsorption zone which can include a filter or precipitation unit. A turbidity sensing unit

Art Unit: 1744

can be used to direct an aqueous VOC stream to a filter or precipitation unit, prior to carbon bed treatment. Other treatment processes include ion exchange beds, air stripping columns and filters (see column 2, line 30 to column 3, line 25). This reference has been relied upon to teach that it is known to measure the concentration of contaminants prior to treatment in order to determine the correct type of treatment.

Therefore, it would have been obvious to one of ordinary level of skill in the art at the time the invention was made to modify the method of LaHaye et al. and include a step of measuring the contaminant concentration in the fluid stream in order to determine the correct treatment parameters as taught by the method of Sivavec et al.

Response to Arguments

1. Applicant's arguments filed 02/16/2004 have been fully considered but they are not persuasive.

On page 8 of the response, applicant argues, "Thus, the method of LaHaye '139 requires at least two charge sources. The problem addressed by LaHaye '139 is quite different from that of the instant invention". The examiner disagrees. Method claim 1 includes the limitation "comprising" such that a second or more charge sources can be included within the scope of the claim. The single charge source in the ('139) reference is the charge applied to the heat exchanger (14) in figure 1. This step is equivalent to the applying step in claim 1. See page 6 of the office action dated 09/26/2003. In addition the claims do not recite the limitation "source or sources" of electrical charge.

On page 8 of the response, applicant argues, "Harms '606 does not teach a step of adjusting the magnitude of said electric charge while continuing said flowing step". The examiner refers the applicant to the ('139) reference with respect to the above limitation. The ('139) reference in col.2, lines 8-10 and through out the reference teaches maintaining the electrical charge on the heat exchanger while the gas is flowing. Maintaining a certain electrical charge necessarily requires some monitoring means that provide a feedback value confirming that the electrical charge is within accepted range. One of the meanings of the word maintain is to keep in a certain state such that, for example, if a sudden change in the value of charge occurs, then the device is capable of returning the charge to its accepted value and thus maintaining

Art Unit: 1744

such a value. As a result, the method of the ('139) reference adjusts the magnitude of the electric charge while continuing the flowing of the fluid. This limitation is in the ('139) reference. The secondary reference is used to explicitly show that such a feature is known.

On pages 9-10 of the response, applicant argues, " LaHaye '139 is not an appropriate reference because it is concerned with the flow of particulate laden combustion gases". The examiner disagrees. The LaHaye reference removes contaminants (fouling) from a fluid stream by applying an electric charge as recited in claim 1 of the instant application.

Conclusion

2. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

3. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 1744

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONZER R CHORBAJI whose telephone number is (571) 272-1271. The examiner can normally be reached on M-F 8:30-5:00.

5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBERT J WARDEN can be reached on (571) 272-1281. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Monzer R. Chorbaji *MRC*
Patent Examiner
AU 1744
05/29/2004

Jill Warden
Jill Warden
Supervisory Patent Examiner
Technology Center 1700